

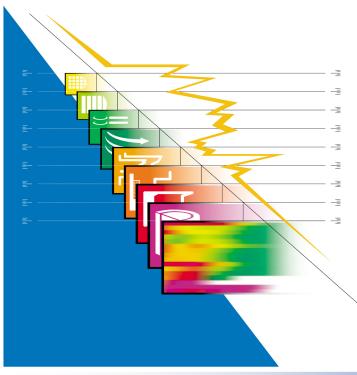


Newfield Exploration

Well: Peacemaker 1-5H

Location: Glacier County, Montana

Filtrate Invasion Analysis Report



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MEASURED SOLUTIONS

1.0 Purpose

To determine the amount of mud filtrate invasion in core samples from the well: Peacemaker 1-5H

2.0 Method

- 2.1 The water based mud was traced prior to initiating coring activities.
- 2.2 Mud samples were collected during coring operations and time correlated to depth.
- 2.3 These samples were measured to establish tracer concentration in the mud filtrate at each sample depth.
- 2.4 The tracer concentration is then measured in the water from the core sample that was extracted using the dean-stark process.
- 2.5 A comparison of the tracer concentration in the extracted water to the tracer concentration in the mud filtrate provides a measure of the filtrate contamination.

Filtrate Invasion % =
$$\frac{^{3}\text{H}_{2}\text{0 concentration in extracted water}}{^{3}\text{H}_{2}\text{0 concentration in mud filtrate}}$$

3.0 Results

A subset of fourty-five (45) mud samples were analyzed from all of the samples collected during the coring operations.

Seventy-four (74) core plugs were taken from the whole core and processed with the dean-stark method. The extracted water was then analyzed for tracer concentration.

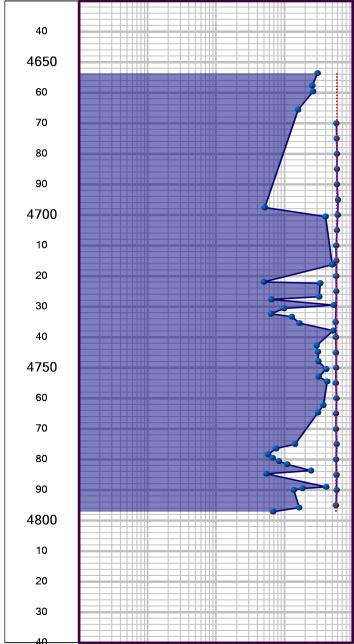
The log(s) and table(s) below show the calculated invasion percentage in each core sample.

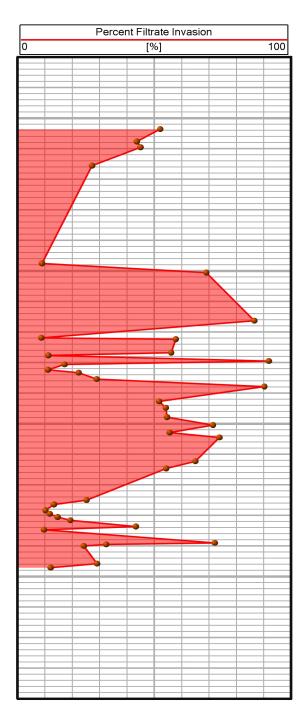
*Note: Final invasion percentages were not quantifiable when the volume of extracted dean-stark water from a plug was below 0.1 milliliters. This resulted in twenty-seven (27) of the total seventy-four (74) dean-stark samples not being included in this report.



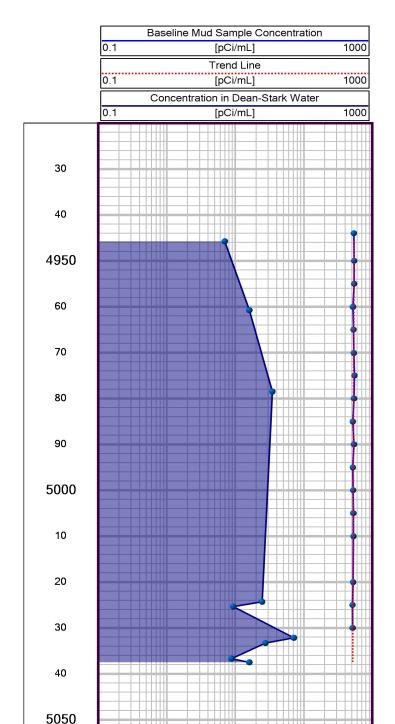


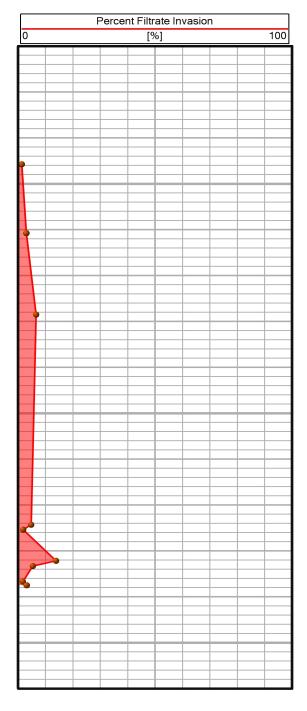
Baseline Mud Sample Concentration				
0.1	[pCi/mL]			
Trend Line				
0.1	[pCi/mL]	1000		
Concentration in Dean-Stark Water				
0.1	[pCi/mL]	1000		











Donth (ft)	Invasion (%)
Depth (ft) 4653.6	52.1
4657.7	43.6
	44.9
4659.6 4665.6	27.2
4697.6	8.9
4700.6	68.9
4716.3	
4716.3	86.5 8.7
4722.4	57.8
4726.8	56.1
4727.7	11.2
4729.5	91.8
4730.6	17.2
4730.0	11.1
	22.3
4733.3	
4735.4	28.9
4737.9	90.2
4742.7	51.7
4744.8	54.2
4747.9	54.6
4750.5	71.4
4752.9	55.5
4754.5	73.8
4762.3	65.0
4764.7	54.3
4775.0	25.2
4776.5	13.3
4778.4	10.2
4779.5	11.8
4780.6	14.6
4781.6	19.3
4783.7	43.2
4784.7	9.6
4789.0	72.1
4789.5	32.4
4790.0	24.2
4795.8	29.1
4797.1	12.1
4945.8	1.3
4960.8	3.0
4978.5	6.5
5024.3	4.7
5025.4	1.8
5032.2	13.8
5033.3	5.3
5036.7	1.7

Depth (ft) 5037.5	Invasion (%) 3.1
5037.5	3.1
	+
	+
	+
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	+
	+
	
	

D (1)	1 (0/)
Depth (ft)	Invasion (%)